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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,326	10/31/2005	Herbert Wolter	060953-0136	2530
23428 7590 05/27/2008 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007				
EXAMINER HEINER, LIAM J				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
05/27/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/527,326

**Applicant(s)**

WOLTER ET AL.

**Examiner**

Liam J. Heincer

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 February 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.  
4a) Of the above claim(s) 19-28 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-18 and 29 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

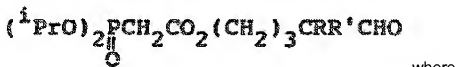
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

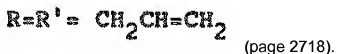
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatakeyama et al. (Tetrahedron Letters, 28(24), 1987, pg. 2717-2720).

Considering Claims 1-6, 9, 10: Hatakeyama et al. teaches a compound of the formula



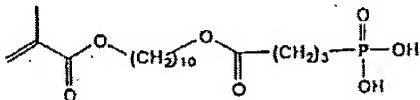
where



Although Hatakeyama et al. does not teach the exact structure of formula I, it does teach a homolog of the structure with one fewer methylene groups between the

acid functionality and the phosphorous atom. The structures are close enough in similarity that a person having ordinary skill in the art at the time of invention would have expected the two structures to share similar properties. See MPEP § 2144.09.  
Considering Claims 7 and 8: Hatakeyama et al. teaches m as being zero (page 2718).  
Considering Claims 11 and 12: Hatakeyama et al. teaches X as being oxygen (page 2718).

Claims 1-18 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (WO00/58316) in view of Billington et al. (US Pat. 4,514,342).  
Considering Claims 1-6, 9-18, and 29: Okada et al. teaches a compound of the formula



formed by the reaction of an acrylate esterified polyol and 2-carboxyethylphosphonic acid (Examples 8-1 and 8-2).

Okada et al. does not teach a polyesterified polyol. However, Billington et al. teaches the reaction of a polyhydric alcohol with at least four hydroxyl groups with at least three of the hydroxyl groups esterified with an acrylate (2:62-66 and 3:19-36) and a phosphorous containing compound (2:62-66). Billington et al. also teaches the polyhydric alcohol as being pentaerythritol (3:37-42). Okada et al. and Billington et al. are combinable as they are concerned with similar technical difficulties, namely the reaction of esterified polyols with phosphorous containing compounds to form dental compositions. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the polyfunctional polyol of Billington et al. in the preparation of the compound of Okada et al., and the motivation to do so would have been, as Billington et al. suggests, to improve the adhesion of the dental composition (3:46-62).

Okada et al. teaches the carboxyethylphosphonic acid and the monophosphate groups as having similar reactivities (Table 9).

Considering Claims 6 and 7: Okada et al. teaches m as being 1 and n as being 1 (Table 9).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1 and 5-9, rejected under 35 U.S.C. 102(b), have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments, see pages 14-18, filed February 14, 2008, with respect to the rejection(s) of claim(s) 1-18 under 35 U.S.C. § 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Okada et al. and Billington et al.

Applicant's arguments filed February 14, 2008 have been fully considered but they are not persuasive, because:

Applicants argument that Billington et al. relates to phosphates is not persuasive. Newly applied Okada et al. shows phosphates and phosphonates as being equivalent in their invention (Table 9). Therefore a person having ordinary skill in the art at the time of invention would have looked to art concerning both phosphates and phosphonates.

Applicants argument that the compound of Okada et al. is made by a different process as the present application is not persuasive. The claim is directed towards a compound, not a process. Therefore the claim is defined by the claimed structure, not by the process of making the compound. As Okada et al. teaches the same linking ester structure as the claim, it meets the claim limitation.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARK EASHOO/

LJH

Supervisory Patent Examiner, Art Unit 1796

May 19, 2008

23-May-08